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SECTOR 7

THE NETHERLANDS—WESTKAPELLE TO TERSCHELLING

Plan.—This sector describes the coast of the Netherlands between Westkapelle, the W extremity of Walcheren, and the Hoek van Holland and the waterway to the port of Rotterdam. It includes the off-lying banks and deeps which front this part of the coast. In addition, the coast between Hoek van Holland and Terschelling is described including the ports of IJmuiden and Amsterdam. The descriptive sequence is S to N.

General Remarks

7.1 Winds—Weather.—Fog may be encountered at anytime, but is most prevalent from January to June in the areas off the coast. It has a relatively high frequency during the months of May and June, but there is little fog in August and September. Inland, near the ports, the foggiest period is October to March; the least foggiest period is May to July.

Caution.—Numerous production platforms, wells, and gas and oil pipelines lie in the waters off the Netherlands coast and may best be seen on the charts. Extreme caution is advised when navigating in the vicinity of such facilities. Some of the production platforms are equipped with racons.

The principal oil and gas fields in the area are listed below:

1. Rijn Oil and Gas Field (52˚18'N., 3˚47'E.).
2. Helder Oil Field (52˚56'N., 4˚09'E.).
3. Helm Oil Field (52˚52'N., 4˚08'E.).

For locations of oil and gas fields lying in the vicinity of the offshore Deep Water Routes, see paragraph 8.6.

Walcheren to the Hoek van Holland

7.2 The coastal area between Westkapelle, on Walcheren, and the Hoek van Holland, 36 miles NE, consists of a number of low islands and off-lying banks. A complex network of waterways, through which the Oosterschelde and the River Maas discharge into the sea, extends between these islands. With the exception of the Nieuwe Waterweg, which leads to the ports of Rotterdam and Dordrecht, these waters are navigated by small inland vessels and are of little interest to ocean-going vessels.

The outer islands, named from S to N, are Schouwen, Goeree, Voorne, and Rozenburg. Sand dunes, up to 27m high, stand on their W sides, but elsewhere the islands are generally protected by dikes. The E parts of Schouwen, Goeree, and Voorne are known, respectively, as Duiveland, Overflakkee, and Putten.

The principal inner islands are Noord Beveland, Zuid Beveland, Tolen, Beijerland, and IJsselmonde. They are all low and surrounded by dikes.

The off-lying banks are found within 9 to 18 miles of the W sides of the above named outer islands. These banks are elongated in a NE/SW direction and are separated by deeps, which are used by coastal vessels bound for the Westerschelde or the Hoek van Holland. The principal banks are Schouwenbank, Schaar, Middlebank, and Steenbanken. Bollen van Goeree is part of the coastal bank which lies in the approaches to the Hoek van Holland.

Zeegat van Zieriksee, the entrance to the Oosterschelde, lies between Walcheren and Schouwen.

The inner estuary of the River Maas is accessible through the Zeegat van Goeree, which lies between Goeree and Voorne, and the Nieuwe Waterweg, which is entered at the Hoek van Holland.

In addition to the large ports of Rotterdam and Dordrecht, there are numerous small harbors and loading places amongst the islands within this area. There are also several canals. The principal one is Kanaal door Zuid Beveland (described in paragraph 6.21), which cuts across the island of Zuid Beveland. This canal may be entered at Wemeldinge, on the N coast of Zuid Beveland, and provides access to the Westerschelde. Kanaal door Walcheren (described in paragraph 6.18), which is entered at Veere, passes through Middelburg and connects with Vlissingen (Flushing).

Aspect.—Prior to the implementation of the delta program, three main waterways lead through the islands which lie between Walcheren and the Hoek van Holland. These were the Oosterschelde and the two branches of the Maas which entered the sea through Zeegat van Brouwershaven and Zeegat van Goeree. In 1970, Zeegat van Brouwershaven was completely closed by a dam constructed between Schouwen and Goeree. Zeegat van Goeree was closed by a similar dam which extends from Goeree to Voorne, but access is provided to small vessels through a lock situated near its SW root. Oosterschelde is closed by a storm surge barrier; a lock, located at the S end, provides access to small vessels.

Oosterschelde lies with Walcheren, Noord Beveland, and Zuid Beveland on its S side and Schouwen and Tholen on its N side. This waterway no longer has any natural connections with the Westerschelde or the Schelde, because it terminates at the Noord Brabant coast, 28 miles within the entrance. However, there is access from the Oosterschelde to the Westerschelde through the Kanaal door Zuid Beveland. The Oosterschelde is connected with the estuary of the Maas by a waterway which leads between Duiveland, on the W side, and Saint Philipsland and Tholen, on the E and SE sides. Hence, Oosterschelde can be considered an outlet of the Maas.

West Schouwen Light (51˚43'N., 3˚42'E.) is shown from a prominent tower, 50m high, standing on the N side of the entrance to the Oosterschelde. The tower is reported to be difficult to identify in some conditions of light.

The main inland water route between Antwerpen and Rotterdam leads from Wemeldinge, the N terminal of the Kanaal door Zuid Beveland, through the waters E of Duiveland and Overflakkee into Hollandsch Diep. It then continues N through Dordsche Kil to the Oude Maas and the ports of Dordrecht and Rotterdam.

Oosterschelde is comprised mainly of an outer part, called Zeegat van Zieriksee, and an inner part, which leads to the Noord Brabant coast. Two principal channels, Roompot and

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West Schouwen Light

Oude Roompot, lead into Zeegat van Zieriksee. The main approach to the lock at the S end of the Oosterschelde barrier is through Westgat and Oude Roompot. An alternate channel through Roompot runs along the N coast of Walcheren. Inside the waterway, there are numerous detached shoal banks and flats, some of which dry. Several channels meander between these banks and flats and the navigable ones are marked by buoys.

There are many small ports and loading places in these waters. However, the facilities at these places can only accommodate small inland vessels and ferry boats. Although Dordrecht can be reached through these waters, ocean-going vessels approach this port through the Nieuwe Waterweg and the Oude Maas.

Pilotage.—Pilotage is compulsory for vessels over 40m in length and all vessels carrying oil, gas, or chemicals (fully or partially loaded). Pilots for the Oosterschelde are available at the Steenbank pilot vessel, which is stationed 1 mile W of Schouwenbank Lighted Buoy (51˚45'N., 3˚14'E.). Vessels should send a request for pilot and ETA at least 6 hours in advance. For details of the pilot station and traffic control, see Pilotage for the Westerschelde in paragraph 6.14.

Caution.—Several dangerous wrecks lie in the vicinity of the off-lying banks and may best be seen on the chart.

The depths off this coast are constantly changing and vessels are advised to take frequent soundings when navigating in this area.

Several submarine cables and pipelines extend seaward from the islands and may best be seen on the chart.

Local knowledge is required to navigate within the Oosterschelde and approaches.

Off-lying Banks

7.3 The sea area within 20 miles NW of Westkapelle and 4 miles W of the Hoek van Holland consists of an extensive coastal bank and several fairly large detached banks, which have shoal ridges with depths of less than 9m.

Steenbanken is the innermost bank and Schouwenbank is the outermost. Numerous patches, with depths of 14 to 18m, lie seaward of the latter.

Schaar (51˚41'N., 3˚10'E.), the westernmost of the off-lying banks, lies N of Rabs Bank and near the SW end of Schouwenbank. It has depths of 10 to 18m, with the least depth lying about 15 miles NW of Westkapelle.

Schouwenbank (51˚46'N., 3˚24'E.) is about 0.5 mile wide and generally steep-to on both sides. Two detached ridges, with general depths of less than 11m, lie on this bank. The N ridge has a least depth of 7m and the S ridge a least depth of 6.4m.

Schouwendiep lies between Schouwenbank and Middelbank. It is 1 to 1.8 miles wide and has depths of 18 to 32m.

Middelbank (51˚42'N., 3˚21'E.), the longest of the off-lying banks, runs parallel to Schouwenbank and is steep-to on both sides. Its NE end joins the coastal bank and the SW end almost reaches Rabs Bank. Three detached ridges, with general depths of less than 11m, lie on this bank. The N ridge has a least depth of 6.6m, the S ridge has a least depth of 7.3m, and the central ridge has a least depth of 9.1m.

Middeldiep lies between Middelbank and Steenbanken and is about 2 miles wide. It has depths of 18 to 29m and is marked by buoys on its S side.

Steenbanken (51˚40'N., 3˚24'E.), steep-to on its NW and SE sides, curves to join Middelbank at its SW end. A ridge, with general depths of less than 11m, extends almost along the entire length of this bank. The NE part of this ridge has a least depth of 3.8m and the SW part has a least depth of 4.9m.

Steendiep, with depths of 18 to 27m, lies between the SE side of Steenbanken and the coastal bank which extends from Walcheren. This channel is marked by buoys on its NW side.

Bollen van Goeree (51˚51'N., 3˚40'E.) and Buitenbank are two long spurs of the coastal bank which front the islands of Schouwen, Goeree, and Voorne. Both these spurs extend in a WSW direction. Buitenbank, the outer spur, has a least depth of 11m lying 9.8 miles NW of the W extremity of Goeree. Bollen van Goeree extends almost to the NE end of Schouwenbank and has two detached depths of 7.9 and 8.8m lying near its SW end.

Approaches to Nieuwe Waterweg (Europoort and Rotterdam)

7.4 **Hoek van Holland** (51˚59'N., 4˚07'E.) is the N entrance point of Nieuwe Waterweg. A breakwater extends WNW for 2 miles from the point and protects the entrance of the waterway from N.

Noord Hinder Lighted Buoy (52˚00'N., 2˚51'E.), equipped with a racon, is moored near the middle of the Noord Hinder Junction Precautionary Area.

Goree Light (51˚55'N., 3˚40'E.) is shown from a prominent tower on a platform standing on the S side of the approaches, 16 miles WSW of Hoek van Holland. A racon is situated at the platform.

Europlatform (52˚00'N., 3˚17'E.), a prominent weather observation and light tower, stands 31 miles W of Hoek van Holland.

Euro Lighted Buoy (51˚57'N., 3˚10'E.) is moored at the outer entrance to the deep-water dredged channel, 34 miles W of Hoek van Holland.

NHR-SE Lighted Buoy (51˚45'N., 2˚40'E.), equipped with a racon, is moored at the S side of the Noord Hinder Junction Precautionary Area, at the N end of the Noord Hinder South TSS.

NHR-N Lighted Buoy (52˚11'N., 3˚05'E.), equipped with a racon, is moored about 14 miles NE of Noord Hinder Lighted Buoy and marks the Noord Hinder North TSS.

Maas Center Lighted Buoy (52˚01'N., 3˚54'E.), equipped with a racon, is moored 6 miles WNW of the head of the N breakwater.

Maasvlakte Light (51˚58'N., 4˚01'E.) is shown from a prominent tower, 62m high, standing on the S side of the entrance to Nieuwe Waterweg, 2 miles SSW of the head of the N breakwater.

Maasvlakte Light

Westhoofd Light (51˚49'N., 3˚52'E.) is shown from a prominent tower, 52m high, standing 11 miles SE of Maasvlakte Light.

Depths—Limitations.—Traffic Separation Schemes (TSS) and Deep-Water Routes (Channels), which are IMO-adopted, are situated in the approaches to Nieuwe Waterweg as depicted on the graphics in paragraph 6.1. The positions of the various schemes and routes, including the relevant navigation aids, may best be seen on the charts.

The Mariners Routing Guide, British Admiralty Chart 5500, contains Passage Planning Chartlets which indicate the routes through the English Channel, Dover Strait, and the S part of the North Sea. Information concerning regulations, pilotage, and radio reporting systems is also included.

A recommendation has been adopted by the IMO that all vessels navigating in the vicinity of the English Channel, Dover Strait, and North Sea should have on board the latest edition of Chart 5500 (British Admiralty) or other equivalent guide.

The combined traffic lanes lead about 130 miles in a general SW direction from the Noord Hinder Junction Precautionary Area to the vicinity of the Greenwich Lightvessel (50˚24'N., 0˚00').

Westhoofd Light

Deep-Draft Tracks have been established within the Traffic Separation Schemes (TSS) and Deep-Water Routes situated in the English Channel, Dover Strait, and the S part of the North Sea. The tracks are for the use of large vessels and take advantage of the best water available; however, these tracks are not to be considered recommended tracks as certain portions of each track pass through areas which may be subject to change.

The Deep-Draft Tracks, which are indicated on the chart, are reported (1998) to be for the use of vessels with drafts of 20.7 to 22.55m, bound for Europoort. Such vessels are advised to have due regard for the height of tide, swell, negative tidal surges, sand wave formations, squat conditions, and required underkeel clearances. They are also recommended to contact the authorities for the latest information concerning the least depths along the tracks.

The controlling depth in the northeastbound Deep Draft Track is reported (2000) to be 27.3m. The controlling depth in the southwestbound Deep Draft Track is reported (2000) to be 23m, which is found over a swept wreck lying close SE of The Varne (50˚58'N., 1˚20'E.).

Vessels with drafts up to 22m, 22.55m in favorable conditions, can use the northeastbound track. The maximum draft for the southwestbound track is not stipulated; however, specific under keel clearances are advised.

For details of waypoints and under keel clearances concerning the Deep Water Routes within the Dover Strait TSS and Noord Hinder South TSS, see Pub. 191, Sailing Directions (Enroute) English Channel (Sector 6).

The Noord Hinder Junction Precautionary Area (51˚55'N., 2˚50'E.) is centered about 45 miles W of Hoek van Holland. The Noord Hinder South TSS extends SW from the SW side of this area and the Noord Hinder North TSS extends NE from the NE side of this area. North Sea Deep-Water Routes connect to the W side of the area.

Vessels should proceed with caution in the precautionary area where the traffic lanes merge. Vessels should, if practicable, remain outside a circular area, with a diameter of 1 mile, centered on North Hinder Lighted Buoy. All vessels navigating

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within the Precautionary Area should keep the above circular area on the port side unless the depths, traffic density, pilotage (helicopter operations), or weather conditions warrant otherwise.

The Maas TSS, which is the principal approach to the entrance of Nieuwe Waterweg, extends E from the E side of the above Precautionary Area. It consists of the following parts:

1. Maas West Outer TSS (51˚58'N., 3˚15'E.), which is centered 32 miles W of Hoek van Holland. The eastbound traffic lane is situated on its S side and the northbound traffic lane is situated on its N side.
2. Maas West Inner TSS (52˚01'N., 3˚40'E.), which is centered 15 miles W of Hoek van Holland. The eastbound traffic lane is situated on its S side and the northbound traffic lane is situated on its N side.
3. Maas Precautionary Area (52˚01'N., 3˚54'E.), which is centered 8 miles W of Hoek van Holland.
4. Maas North TSS (52˚05'N., 3˚55'E.), which is centered 10 miles NW of Hoek van Holland. The southbound traffic lane is situated on its W side and the northbound traffic lane is situated on its E side.
5. Inshore Traffic Zone (51˚55'N., 3˚45'E.), which is centered 13 miles SW of Hoek van Holland.

Vessels should proceed with caution in the Maas Precautionary Area where the traffic lanes merge. Vessels which are not compelled to adhere to the Deep Water Route should, if practicable, remain outside a circular area, with a diameter of 1 mile, located N of Maas Center Lighted Buoy. All vessels navigating within the Maas Precautionary Area should keep the above circular area on the port side unless the depths, traffic density, pilotage (helicopter operations), or weather conditions warrant otherwise.

In the area lying between the Maas West Outer TSS and the Maas West Inner TSS, shipping routes cross each other or converge. Such routes include the Texel TSS to Westerschelde and Maas to Westerschelde.

The inbound and outbound lanes of the Maas TSS have depths in excess of 17m.

7.5 Eurogeul Approach Area (51˚58'N., 3˚06'E.) lies on the E side of the Noord Hinder Junction Precautionary Area and has a least depth of 25m. It is entered from the Deep Water Route. Vessels with only a short wait for the tide may remain underway in the W part of this area.

Eurogeul (52˚00'N., 3˚32'E.) is a deep water dredged approach channel. It is entered at the E side of the Eurogeul Approach Area, close N of Euro Lighted Buoy. This channel extends ENE to Maas Center Lighted Buoy, passing through the separation zones of the Maas West Outer TSS and the Maas West Inner TSS. The center fairway, which is 600m wide, has depths of 24 to 24.5m. It is bordered on both sides by dredged areas, 300m wide, which have depths of 22m.

Three dredged turning spaces, each with a diameter of 2,700m, are located along Eurogeul and may best be seen on the chart. The first lies within the separation zone of Maas West Outer TSS, the second lies S of the channel and close W of Maas West Inner TSS, and the third lies close ENE of Maas Center Lighted Buoy.

Maasgeul (52˚00'N., 4˚00'E.), an inner deep water channel, leads ESE for 6 miles from the E end of Eurogeul, at Maas Center Lighted Buoy, into Maasmond, S of the head of the N breakwater. This channel is 600m at the W end and narrows to a width of 500m at the E end. It has a dredged depth of 23.4m.

Maasmond (51˚59'N., 4˚03'E.), an entrance channel, leads ESE for about 1.5 miles from the head of the N breakwater. It has a depth of 22.8m and divides into two branches. The N branch leads into Nieuwe Waterweg and the S branch leads into Calandkanaal and Europoort.

The above channels are marked by lighted buoys or lighted ranges, which may best be seen on the chart.

Vessels with drafts up to 22.55m can transit these approach channels, in favorable conditions, and reach Europoort. Vessels with drafts up to 20m can normally transit at any time (see Regulations—General described below).

Pilotage.—Vessels without local knowledge of the approaches should obtain a deep-sea pilot. Vessels bound for the waterway through the English Channel, with drafts of 20.7m and over, should request a sea pilot to board by helicopter off Cherbourg (see Regulations—Traffic Control described below).

Pilotage in the waterway is compulsory for vessels over 40m in length, with certain exceptions, and all vessels carrying oil, gas, chemicals, or dangerous cargo.

Vessels with drafts of less than 17.37m should send a request for pilotage at least 6 hours in advance through Scheveningen (PCH) or Maas Approach on VHF channel 1. The message should include the words “Pilot Station” in addition to the vessel’s name, call sign, grt, draft, destination, and ETA. An updated message should be sent if the ETA becomes over 1 hour in error.

Pilots normally board about 1 mile S of Maas Center Lighted Buoy (52˚01'N., 3˚54'E.). If required, pilots can board by helicopter.

Pilots can be transported to and from vessels by helicopter at the following areas:

1. Area Maas North—Bounded by a circle of 5 miles radius centered on position 52˚15.5'N, 3˚59.5'E.
2. Area Maas West—Bounded by a circle of 5 miles radius centered on position 51˚56.0'N, 3˚28.0'E.
3. Area Maas West—Bounded by a circle of 3 miles radius centered on position 52˚05.5'N, 3˚42.0'E.

Vessels with drafts of 17.37m and over should send a request for pilotage and ETA message at least 8 hours in advance. They are considered to be channel-bound and must approach via Eurogeul and Maasgeul. Such vessels must always embark the pilot by helicopter in the rendezvous position (52˚00'N., 3˚00'E.) located in the NW part of the Eurogeul Approach Area.

All vessels requiring a pilot to embark by helicopter should include this request in their ETA message and state their direction of approach.

When the helicopter has arrived within VHF range, it will contact the vessel by VHF on the appropriate VTS Sector channel (see Regulations—Traffic Control described below). This generally takes place when the helicopter is between 20 and 40 miles from the vessel. The call sign of the helicopter will be the word “Pilot Helicopter” followed by its registration letters as quoted by the VTS Traffic Center, Hoek van Holland.

As soon as VHF contact has been established, the vessel should advise the helicopter of its position, course, and speed;

the actual wind direction and wind speed across the deck; and any pitching or rolling conditions. The helicopter will then confirm acceptance of the conditions or will request the vessel to change course and/or speed.

Generally, helicopters operate in winds up to 55 knots (Force 10) and when the visibility is in excess of 0.75 mile by night and 0.5 mile by day at a height of 46m (150 feet). However, severe turbulence or icing below 46m may cause the service to be withdrawn.

All inbound vessels must report to Pilot Maas on VHF channel 2, giving their name and call sign, when leaving the Maas Approach Sector (see Regulations—Traffic Control described below).

The pilot station can be contacted by E-mail, as follows:

info@dirkmail.com

Regulations—Traffic Control.—A Vessel Traffic Service (VTS) system operates in the approaches to Nieuwe Waterweg. It is managed by the Harbor Coordination Center (HCC) Rotterdam and provides navigational information as required.

Vessels bound for the waterway through the English Channel, with drafts of 20.7m and over, should request a sea pilot to board by helicopter off Cherbourg. Such vessels should send a request for pilot at least 24 hours in advance to the Central Traffic Control (HCC) Rotterdam through Scheveningen (PCH).

The message should include name; call sign; grt; draft in salt water; ETA at pilot boarding position off Cherbourg (13 miles N of Cap de la Hague); a request for Euro Channel pilot to board by helicopter; a confirmation that gyro, radar, and VHF are functioning or whether an expert is required for this equipment; and a request for information after passing Cherbourg. This message should be amended or confirmed at least 12 hours in advance.

After passing Cherbourg, the above vessels will be provided with information by the HCC concerning sea and/or depth conditions at the critical areas along their intended track, including the vicinity of Twin Lighted Buoy (51˚32'N., 2˚23'E.). They should not pass the abort point (50˚29'N., 0˚53'E.) unless conditions in the vicinity of Twin Lighted Buoy are normal, nor enter the Dover Strait TSS if their radar is not working.

Vessels with drafts of 17.4m and over should report to Traffic Center, Hoek van Holland (VCH) through Scheveningen (PCH) at least 6 hours before arrival at the pilot boarding position in the approaches to the waterway. The message should include name, call sign, grt, draft, ETA at pilot boarding position, and confirmation that gyro, radar, and VHF are functioning. Such vessels should establish contact with Mass Approach on VHF channel 1 when near NHR-SE Lighted Buoy (51˚45'N., 2˚40'E.).

Vessels with drafts less than 17.4m but 250m or more in length should report as above at least 4 hours before arrival at the pilot boarding place in the approaches to the waterway, omitting the confirmation of functioning instruments.

All vessels carrying dangerous cargo should report to the Central Traffic Control (HCC) Rotterdam at least 24 hours before arrival at the pilot boarding place in the approaches to the waterway. The message should include name, call sign, nationality, grt, draft, nature and quantity of dangerous cargo, destination, and name of agent.

Vessels should report to Maas Approach on VHF channel 1, 3 hours before arrival in the vicinity of Maas Center Lighted Buoy. They should state their name, call sign, nationality, grt, length, draft, destination, ETA at Maas Center Lighted Buoy, and any special details. In addition, vessels should report upon entering the area of radar coverage, which is within about 20 miles of position 52˚02.3'N, 3˚31.6'E.

Inbound vessels should also report at the following appropriate calling-in points, which are indicated on the chart:

1. Point A (51˚52.9'N., 3˚08.9'E.)—VHF channel 1.
2. Point C (51˚57.7'N., 3˚35.5'E.)—VHF channel 1.
3. Point D (51˚59.4'N., 3˚46.5'E.)—VHF channel 2.
4. Point E (52˚00.7'N., 3˚58.1'E.)—VHF channel 3.
5. Point I (52˚14.8'N., 3˚56.6.'E.)—VHF channel 1.
6. Point J (52˚05.5'N., 3˚52.7'E.)—VHF channel 2.
7. Point O (51˚58.2'N., 3˚10.2'E.)—VHF channel 1.

Outbound vessels should report at the following appropriate calling-in points, which are indicated on the chart:

1. Point F (52˚01.5'N., 3˚58.7'E.)—VHF channel 2.
2. Point G (52˚04.8'N., 3˚57.2'E.)—VHF channel 1.
3. Point H (52˚14.0'N., 4˚01.4.'E.)—VHF channel 1.
4. Point K (52˚04.2'N., 3˚45.4'E.)—VHF channel 1.
5. Point N (52˚02.9.'N., 3˚09.1.'E.)—VHF channel 1.
6. Point O (51˚58.2'N., 3˚10.2'E.)—VHF channel 1.

Crossing vessels should report at the following appropriate calling-in points, which are indicated on the chart:

1. Point B (51˚53.4'N., 3˚29.9'E.)—VHF channel 1.
2. Point M (52˚09.0'N., 3˚20.5'E.)—VHF channel 1.

The approaches and waterway are divided into Sectors. While navigating within these Sectors, vessels should maintain a continuous listening watch and use the assigned VHF channels for communication with shore stations, as follows:

1. VHF channel 1 (Maas Approach)—The outer approaches from the limit of radar coverage to the W boundary of the Maas Precautionary Area.
2. VHF channel 2 (Pilot Maas)—The outer part of the Maas Precautionary Area, W of a line extending 194˚ from MN3 Lighted Buoy.
3. VHF channel 3 (Maas Entrance)—Inner part of the Maas Precautionary Area and entrance channel, W of Hoek van Holland (VCH) Traffic Center Station (51˚58.9'N., 4˚06.8'E.)
4. VHF channel 65 (Rozenburg)—Km 1023 to Km 1030.5 and Calandkanaal.
5. VHF channel 80 (Maasluis)—Km 1017 to Km 1023.
6. VHF channel 61 (Botlek)—Km 1011 to Km 1017.
7. VHF channel 63 (Eemhaven)—Km 1007 to Km 1011.
8. VHF channel 60 (Waalhaven)—Km 1003 to Km 1007.
9. VHF channel 81 (Maasbruggen)—Km 998 to Km 1003.
10. VHF channel 21 (Brienenoord)—Km 993 to Km 998.
11. VHF channel 66 (Europoort).
12. VHF channel 5 (Hartel)—Hartelkanaal W of Geervliet.
13. VHF channel 62 (Oude Maas).

English is the language used on VHF channel 1 (Maas Approach), VHF channel 2 (Pilot Maas), and VHF channel 3 (Maas Entrance).

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Traffic Center Hoek van Holland (VCH) broadcasts marine information, including visibility reports, on request. Marine information may also be obtained by vessels at sea through Maassluis Radio Dirkzwager on VHF channel 12 and through Maas Approach on VHF channel 1.

Regulations—General.—Vessels with drafts of 17.4m and over must use the Eurogeul and Maasgeul channels (see Depths—Limitations in paragraph 7.4).

Vessels with drafts of less than 17.4m should use the normal traffic lanes of the Maas West Outer TSS and Maas West Inner TSS. Such vessels join or leave Maasgeul to the E of MO Lighted Buoy (52˚01'N., 3˚58'E.).

Vessels with drafts of 17.4m and over are considered to be constrained by their draft and must display the appropriate lights or signals.

Vessels with drafts of over 20m are considered to be constrained by the tide. Such vessels, when inbound, are issued a set of tidal window tables, which indicate the time that they may pass the entrance to Eurogeul (51˚58'N., 3˚10'E.). The tidal window depends on the vessel's dwt, cargo, and draft. It also takes into account the expected wave and tidal levels during the passage. The table is calculated so that the vessel may navigate safely in the channel within certain speed limits, which have been observed to be 8 to 11 knots in Eurogeul and 6.5 to 8 knots in Maasgeul.

Such vessels, when outbound, are given a tidal window, which depends on their draft. It allows for an underkeel clearance of 15 per cent of the draft in Maasgeul and 20 per cent in Eurogeul. This calculation allows for the reduction in available depth due to low frequency waves.

Crossing vessels should avoid the Maas Precautionary Area. Vessels proceeding N should cross Eurogeul, at right angles, between E5 Lighted Buoy (51˚59.0'N., 3˚25.5'E.) and E7 Lighted Buoy, 3 miles ENE. Vessels proceeding S should cross Eurogeul between E5 Lighted Buoy and E3 Lighted Buoy, 3 miles WSW. (See Regulation—Traffic Control, previously described above).

Small craft requiring to cross Maasgeul should do so by passing W of a line joining MV Lighted Buoy (51˚57.5'N., 3˚58.5'E.), MV-N Lighted Buoy, 2.5 miles NNE, and Indusbank Lighted Buoy, 4 miles NNE. It should be noted that large vessels constrained by their draft to the deep-water channel, which are displaying the appropriate signals or lights, cannot give way to other vessels.

All vessels are prohibited from anchoring in the vicinity of Maasgeul and the entrance fairway. In addition, vessels are recommended not to anchor within the Maas Precautionary Area, except in an emergency.

Anchorage.—The following designated anchorage areas have been established in the approaches to the waterway and may best be seen on the chart:

1. Area DW1 (52˚06'N., 2˚47'E.) is situated on the NW side of the Noord Hinder Junction Precautionary Area. This area may be used long term by deep-draft vessels and they may remain under the most extreme conditions.
2. Area DW2 (51˚56'N., 2˚55'E.) is situated within the Noord Hinder Junction Precautionary Area. This area may be used short term by deep-draft vessels waiting for the tide or a pilot.
3. Area Outer 3 (52˚01'N., 3˚19'E.) is situated N of the Eurgeul at the E end of the Maas West Outer TSS. This area is used by vessels with drafts up to 17.4m, which cannot anchor in Maas West 4 or Maas Noord 5.
4. Area Maas West 4 (51˚57'N., 3˚46'E.) is situated S of the E part of Maas West Inner TSS. This area may be used by vessels with drafts up to 12.2m in its N part and up to 9.1m in its S part.
5. Area Maas Noord 5 (52˚07'N., 3˚50'E.) is situated close W of Maas North TSS. This area may be used by vessels with a maximum draft of 13.7m.

During an emergency, vessels may also anchor within the dredged turning area situated ENE of Maas Center Lighted Buoy.

Caution.—Numerous wrecks, some dangerous, lie in the approaches to Nieuwe Waterweg. Those which lie close adjacent to the TSS or recommended approach channels are generally marked by lighted buoys.

Currents in the vicinity of Eurogeul and Maasgeul can have a strong cross-channel component.

Several submarine cables and pipelines lie in the approaches and may best be seen on the chart.

Production platforms and wells may be encountered in the approaches; extreme caution is advised when navigating in the vicinity of these facilities.

The Nieuwe Waterweg

7.6 The Nieuwe Waterweg leads from Hoek van Holland to the port of Rotterdam, a distance of about 18 miles. The fairway between the junction with the Oude Maas, about 10 miles above the entrance, and Rotterdam is known as Nieuwe Maas. The Oude Maas leads in a SE direction to the port of Dordrecht.

Entrance to the Nieuwe Waterweg

Tides—Currents.—At the Europlatform (52˚00'N., 3˚17'E.), situated about 30 miles W of the entrance to Nieuwe Waterweg, the tidal rise is about 2m at springs and about 1.6m at neaps. At Hoek van Holland, the tidal rise is about 1.8m at springs and 1.5m at neaps.

Strong winds from W through N may generate a heavy sea off the entrance of the waterway, particularly about the time of LW. When such conditions exist, it is not advisable to enter. The sea generally moderates when the outgoing current in the

waterway and the SW offshore current lose their strength; this occurs about 3 hours before HW. Therefore, vessels should find the best time to enter is from 2 hours before to 2 hours after HW.

With strong SW winds, vessels should wait until 1 to 2 hours after HW to enter as the strength of the incoming current will have decreased by then.

The water level of the rivers upstream and the direction of the wind greatly influence the duration of the water flow in the waterway. When the rivers are in flood and the wind is from the E or S, it is possible during neap tides to have practically no incoming current at the entrance. Farther up the waterway, between Maassluis and the Oude Maas, there is an incoming current, but its duration and rate are decreased. These same conditions may reduce the height of tide.

The incoming tidal current is at its greatest strength about 30 minutes before HW and attains rates of about 3.5 knots during springs and 2 knots during neaps in the outer part of the waterway; in the inner part, its rates are about 1 knot less.

The outgoing tidal current is at its greatest strength about 5 hours after HW and attains rates of about 4 knots during springs and 2.5 knots during neaps in the outer part of the waterway; in the inner part, its rates are about 1 knot less.

In the outer part of the waterway, the rate of the tidal current at certain depths is greater than at the surface; the current at certain depths also changes direction sooner than at the surface.

At a depth of about 7m, the tidal current may attain a rate of 5.5 knots. This undercurrent flows into the waterway even before the water begins to rise, while on the surface the outgoing current is still running. It stops before HW, sometimes up to 2 hours before, while a strong incoming current continues on the surface. At Maassluis, this undercurrent changes direction approximately 30 minutes later than the surface current. However, off Vlaardingen, where the water is completely fresh, the movement of the current is uniform throughout its depth.

Off the entrance during the outgoing current, the division between the muddy water of the waterway and the clear North Sea is plainly visible. It is usually indicated by a line of ripples which extends W, NW, and N from the head of the N breakwater. This line, depending upon the winds and currents, may extend for only a short distance or up to 7 miles seaward.

Depths—Limitations.—Vessels with drafts up to 13.4m can transit Nieuwe Waterweg as far as Botlek (51˚54'N., 4˚18'E.). Vessels with drafts up to 12.2m can transit the waterway as far as Waalhaven (51˚54'N., 4˚26'E.) at Rotterdam.

Aspect.—Prominent landmarks include the light structures, with helicopter platforms, standing at the head of the N breakwater and on Zuiderdam, at the S side of the entrance; the signal station standing 0.5 mile ESE of the root of the N breakwater; a tower standing 0.8 mile NNE of the signal station; and the buildings of the ferry terminal standing close E of the signal station. Conspicuous landmarks include several buildings standing at the oil terminal, on the S side of the entrance; and two conspicuous chimneys, 175m high, standing at a power station, 1 mile SSE of Maasvlakte Light (51˚58'N., 4˚01'E.).

Splitsingsdam, an elongated central mole, is situated close inside the entrance and divides the waterway. Nieuwe Waterweg extends along the N side of this mole and Calandkanaal, leading to Europoort, extends along its S side. Lighted ranges, which may best be seen on the chart, indicate Maasgeul and the entrance fairways.

The waterway is marked by lights and beacons and indicated by lighted ranges.

Regulations.—Vessels underway within the waterway, with drafts of 9m and over, must display the appropriate signals for vessels constrained by their draft. Dredges in the waterway will keep out of the way of such vessels.

Vessels carrying explosives, dangerous cargo, or not gas free, must display, by day, flag B of the International Code of Signals and, at night, exhibit two red lights, disposed horizontally.

There are no restrictions on the movement of dry cargo vessels, in view of radar coverage, during fog. However, tugs do not operate in dense fog and tanker movements are not permitted if the visibility is less than 500m.

Caution.—Numerous submarine cables, pipelines, and tunnels lie across the waterway and may best be seen on the chart.

Several ferries cross the waterway at various places which are indicated on the chart.

The waterway has been stabilized in places by underwater dams and embankments, which are marked by dolphins and beacons.

Prohibited anchorage areas are situated along the waterway and may best be seen on the chart.

7.7 Hoek van Holland Harbor (51˚59'N., 4˚08'E.) (World Port Index No. 31080), a small harbor, is located on the N side of the waterway, 1.2 miles ESE of the root of the N breakwater. It consists of Berghaven, a small basin, and several riverside quays for ocean-going vessels. Berghaven is only suitable for small craft and is used exclusively by government vessels.

Harwich Quay (Harwichsteiger), situated close ESE of the basin, is the terminus of the Harwich/Hoek van Holland ferry service. It has three ro-ro berths with depths of 6.6 to 9m alongside. Vianda Quay, situated 0.6 mile ESE of Harwich Quay, is used by the Royal Netherlands Navy.

Europoort (51˚57'N., 4˚08'E.)

World Port Index No. 31085

7.8 Europoort, a deep-water harbor complex, is located on the S side of the waterway, close within the entrance. It is designed for the accommodation of very large vessels and the storage and transshipment of various cargoes. This complex is considered to be a part of the port of Rotterdam. The W section of the complex, located at the W side of Beerkanaal (51˚58'N., 4˚05'E.), is known as Maasvlakte.

Depths—Limitations.—Calandkanaal, with a depth of 21.7m, extends for about 6 miles along the S side of Splitsingsdam and provides access to the following main basins and quays at Europoort:

1. EECV Bulk Quay, with depths of 18.7 to 23.7m.
2. Beneluxhaven, with a depth of 21.7m.
3. Petroleumhaven No. 4, with a depth of 17.7m.
4. Petroleumhaven No. 5, with a depth of 21.7m.
5. Kuwait Oil Jetties, with depths of 12.8 to 20.7m.

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6. Petroleumhaven No. 7, with a depth of 22.7m.
7. Brittaniahaven, with a depth of 12.7m.
8. Seinehaven, with a depth of 6.7m.

Beerkanaal, with a depth of 22.7m, leads S from Calandkanaal, close within its entrance, and provides access to the following main basins at Maasvlakte and Europoort:

1. Petroleumhaven No. 8, with a depth of 24m.
2. Maasvlakte Oil Terminal, with a depth of 24m.
3. Europahaven, with depths of 13.6 to 15.7m.
4. Amazonehaven, with a depth of 21.7m.
5. Mississippihaven, with a depth of 23.7m.
6. Petroleumhaven No. 6, with a depth of 22.5m.

Hartelkanaal leads along the S side of the harbor for about 12 miles and can be entered from Oude Maas or through a lock from Calandkanaal. It is used by inland vessels, small coasters, and barges.

Breeddiep, located about 1.5 miles above the outer end of Splitsingsdam, connects Nieuwe Waterweg to Calandkanaal and may only be used with prior permission. Due to being narrow and the strong tidal currents in its vicinity, passage through this channel is not recommended.

There are facilities for general cargo, tanker, LPG, ro-ro,, container, chemical, ore, bulk, and automobile carrier vessels within the port complex. Vessels up to 350,000 dwt and 500,000 dwt, partly loaded, with drafts up to 22.55m, can be accommodated.

7.9 **Maassluis** (51˚55'N., 4˚15'E.) (World Port Index No. 31100), a small harbor, is located on the N side of the waterway, about 5.5 miles above Hoek van Holland Harbor. A church, with a conspicuous conical tower, stands in the town. The harbor consists of two narrow basins, separated by a bridge and a lock, 13m wide. The basins have depths of 3 to 4.7m and are used as bases for ocean-going tugs and pilot vessels.

Botlek (51˚53'N., 4˚18'E.), an industrial harbor complex, is located on the S side of the waterway, 3 miles above Maassluis and close W of the entrance to Oude Maas. It consists of the following main basins:

1. Chemiehaven, with a depth of 12.7m.
2. St. Laurenshaven, with a depth of 14.5m.
3. Petroleumhaven No. 3, with a depth of 12.7m.
4. Botlek Main Basin, with a depth of 14.5m.
5. Torontohaven, with a depth of 13.7m.

There are facilities for ore, bulk, oil, and chemical vessels and also a shipyard basin and a tanker cleaning installation. Generally, vessels up to 270m in length and 13.4m draft can be accommodated; however, it is reported (2000) that vessels with drafts up to 13.7m have been handled. Vessels between 270 and 300m in length normally lighten to a draft of 12.8m at Europoort or Maasvlakte prior to berthing here.

7.10 **Vlaardingen** (51˚54'N., 4˚21'W.) (World Port Index No. 31120) is located on the N side of the waterway, 4 miles above Maasluis. This small port is operated by the local municipality. Vlaardingen Vaart, the W part of the harbor, consists of two narrow basins separated by a lock and a bridge. The basins have depths up to 3.7m and are mostly used by yachts.

The W part of the harbor consists of Koningin Wilhelminahaven, a basin with depths up to 5m. It has an entrance, 75m wide, and is used by inland vessels and coasters.

Vulcaanhaven, a basin located 0.4 mile above Koningin Wilhelminahaven, has depths up to 12.7m. It can accommodate vessels up to 85,000 dwt, 260m in length, and 11.9m draft.

Nieuwe Matex Terminal is situated on the N side of the waterway, close below the entrance to Vulcaanhaven. It provides five berths for ocean-going tankers and chemical carriers, with drafts up to 12.2m.

Schiedam (51˚54'N., 4˚24'E.) (World Port Index No. 31130) is located on the N side of the waterway, close above Vlaardingen. This small port, although near to Rotterdam, is operated by the local municipality. Wiltonhaven, entered at the W side of the harbor, is an extensive repair basin with floating docks and workshops. Vessels up to 160,000 dwt can be handled.

Wilhelminahaven, at the E side of the harbor, has depths up to 7.2m at HW. The workshops of the Nieuwe Waterweg Shipbuilding Company are situated in this basin and there are facilities for tank cleaning and gasfreeing. In addition, there are several private berths up to 150m long.

Pernis (51˚53'N., 4˚22'E.) is located at the S side of the waterway, 1.5 miles above the entrance to Botlek. The harbor consists of two main basins. Petroleumhaven No. 1 has a depth of 12.7m and Petroleumhaven No. 2 has a depth of 12m. Tankers up to 50,000 dwt, 247m in length, and 12m draft can be accommodated.

Rotterdam (51˚54'N., 4˚29'E.)

World Port Index No. 31140

7.11 Rotterdam, an extensive port, is situated on both sides of the Nieuwe Maas, about 16 miles above Maasmond. It is connected to the inland waterway system and provides access via canals to Germany, France, and Switzerland.

Tides—Currents.—Tides rise about 1.8m at springs and 1.5m at neaps.

Depths—Limitations.—The port extends for about 4.5 miles above Schiedam (51˚54'N., 4˚24'E.) but access to the upper part, about 1 mile long, is limited by bridges. The river is spanned by a fixed road bridge, with a bascule section at the SE end, located close SW of the island of Noordereiland (51˚55'N., 4˚30'E.). The fixed section of this bridge has a navigable width of 200m, with a vertical clearance of 11m; the bascule section has a navigable passage 50m wide.

Fixed road and fixed rail bridges, with a minimum vertical clearance of 8m, span the channel leading between the N side of Noordereiland and the N bank of the waterway. A bascule road bridge and a lifting rail bridge span the channel leading between the S side of Noordereiland and the S bank of the waterway. The bascule bridge provides a navigable passage 50m wide; the lifting bridge has a vertical clearance of 45m over a depth of 6m.

The following main harbor basins and quays are situated on the N side of the waterway and are described from W to E:

1. Merwehaven, with a depth of 10.7m. It has container, ro-ro, and reefer facilities.

2. Keilehaven, with a depth of 4.7m. It is mostly used by inland vessels.
3. Lekhaven, with a depth of 10.7m. It has general cargo and bulk facilities.
4. Ijselhaven, with a depth of 10.9m. It has general cargo facilities.
5. Schiehaven, with a depth of 9.1m.
6. St. Jacobshaven, with a depth of 8.7m.
7. Parkhaven, with a depth of 8.7m.
8. Lloydkade, a river berth, is situated close W of Parkhaven and has a depth of 9.2m alongside.

The following main harbor basins and quays are situated on the S side of the waterway and are described from W to E:

1. Eemhaven Main Basin, with a depth of 13.5m.
2. Prins Johan Frisohaven, with a depth of 10.7m. It has general cargo and ro-ro facilities.
3. Prinses Beatrixhaven, with a depth of 10.7m. It has general cargo, container, and ro-ro car ferry facilities.
4. Prins Willem Alexanderhaven, with a depth of 12.7m. It has extensive container facilities.
5. Waalhaven, a large basin, has eight piers and a depth of 14m It has container and ro-ro facilities, and several mooring buoy berths for LASH vessels.
6. Maashaven, with a depth of 11.7m.

The basins and quays situated above Parkhaven are used exclusively by inland vessels, barges, and small craft.

Within the harbor complex, there are facilities for general cargo, bulk, oil, ro-ro, container, LASH, automobile ferry, and reefer vessels. Vessels with drafts up to 12.2m can transit the waterway and enter Waalhaven.

In addition, several dry docks and floating docks are situated within the port (including Maasvlakte, the Europoort complex, and Botlek). The largest, which is 405m long and 90m wide, can handle vessels up to 500,000 dwt.

Dordrecht (51˚49'N., 4˚39'E.)

World Port Index No. 31150

7.12 Dordrecht is located at the junction of four important inland waterways: the Oude Maas; the Merwede, leading to the Rhine; the Noord, leading to Rotterdam; and Dordsche Kil, leading to Belgium. The port lies about 15 miles above the entrance into Oude Maas and 26 miles above Hoek van Holland.

Tides—Currents.—Tides at the entrance to Oude Maas rise about 2.2m at springs and 2m at neaps. Tides at Dordrecht rise about 1.2m at springs and 1m at neaps.

Strong tidal currents are usually encountered in the entrance to Oude Maas and in the vicinity of the bridge openings, especially during the ebb and with HW levels in the upper rivers.

Winds—Weather.—The harbor basins usually freeze during severe winters and drift ice in the waterways may impede the navigation of small vessels.

Depths—Limitations.—The channel is spanned by two lift bridges, Botlekbrug and Spijkenisserbrug, which are situated close N and S of the entrance to Hartelkanaal, 1.5 miles above the entrance to Oude Maas. Botlekbrug has a vertical clearance of 44m, when opened, and a navigable passage 54m wide. Spijkenisserburg has a vertical clearance of 44m, when opened, and two navigable passages, each with a width of 80m. In addition, an overhead power cable, with a vertical clearance of 44m, spans the channel 1.7 miles above Spijkenisserburg.

The fairway, which has a least depth of 9.6m on the centerline, is generally 100m wide. However, waiting areas, 900m long and 200m wide, are situated above and below the bridges.

Generally, ocean-going vessels transiting the Oude Maas require the services of three or four tugs.

The port consists of the following main basins:

1. Wilhelminahaven, the largest basin, has a depth of 9.5m; several mooring buoys are situated within it.
2. Julianahaven consists of three smaller basins, which have depths of 8 to 9m. It is mainly used for handling mineral oils and chemicals. Numerous oil storage tanks stands on the W side of this basin.
3. Mallegat North Basin has a depth of 9.5m.
4. Mallegat South Basin has a depth of 7.3m.

In addition, there is 3,010m of riverside berthage, with depths up to 5m, and several small basins, with depths of 2.4 to 5m, which are used by small coasters and inland vessels. Above the basins used by most ocean-going vessels, the fairway is spanned by two bridges. The road bridge, with a double bascule opening, has a passage 44m wide, and the railway bridge, with a lifting section, has a vertical clearance of 44m.

The harbor has facilities for ro-ro, general cargo, passenger, bulk, oil, container, LPG, and chemical vessels. Generally, vessels up to 175m in length, 25m beam, and 9.4m draft can be accommodated in the port.

Regulations.—Vessels underway in Oude Maas, with drafts of 7m and over, must display the appropriate signals or lights for a vessel constrained by their draft.

Vessels exceeding 135m in length or 17.5m beam must request and obtain permission to navigate in Oude Maas at least 24 hours before entering the fairway. The message should be sent to Central Traffic Control (HCC) Rotterdam and include the vessel name, call sign, nationality, length, beam (in meters), draft, and ETA at Hoek van Holland.

When in the Dordrecht harbor area, above Oude Maas Km 979.3 (51˚48.2'N., 4˚38.4'E.), vessels should maintain a listening watch on the relevant VHF channel for that sector of the river.

Signals.—Vessels entering Oude Maas from the waterway should sound three long blasts followed by one short blast when approaching from seaward and three long blasts followed by two short blasts when approaching from the direction of Rotterdam.

Caution.—Several submarine cables and pipelines lie across the Oude Maas in the vicinity of the bridges and may best be seen on the chart.

Hoek van Holland to Ijmuiden

7.13 The coast between Hoek van Holland and Scheveningen, 9 miles NE, is backed by low sand dunes and fronted by numerous protective groynes. Prominent church towers stand at Monster and Ter Heidje, 3.5 and 4 miles, respectively, NE of the Hoek van Holland and several conspicuous buildings stand on the dunes at Kijkduin, 2.5 miles SW of Schevengen.

Scheveningen (52˚06'N., 4˚16'E.) (World Port Index No. 31070), a resort town, is fronted by a small port.

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Tides—Currents.—Tides rise about 2.1m at springs and 1.7m at neaps.

Depths—Limitations.—The harbor is entered between two outer breakwaters and consists of three main basins. The entrance is 70m wide and has a depth of 7.3m. First Harbor Basin has a depth of 7.3m; Second Harbor Basin has a depth of 2.8m and is entered through a narrow channel; and Third Harbor Basin has a depth of 5m. There are facilities for general cargo vessels, ro-ro ferries, fishing boats, and pleasure craft. Vessels up to 163m in length and 6.5m draft can be accommodated.

Aspect.—A main light is shown from a prominent tower, 30m high, standing 0.5 mile E of the entrance. The approach channel is indicated by a lighted range and a fairway lighted buoy, which is moored about 2 miles NW of the entrance.

Scheveningen Light

Numerous conspicuous buildings and hotels stand in the town and several conspicuous radio masts stand on the SW side of the harbor. The congress building and Peace Palace, standing at 's-Gravenhage (The Hague), 1.4 miles inland, are also prominent from seaward.

A promenade pier, 335m long, extends NW from the shore, 1.3 miles NE of the entrance and a conspicuous tower, 33m high, stands on its outer end.

Pilotage.—Pilotage is compulsory for vessels over 120m in length. Pilots may be obtained from Nieuwe Waterweg (Hoek van Holland) stations.

Vessels over 60m in length intending to enter the port or anchor in the roadstead should send a pre-entry report 48 hours in advance. The report should be in writing and may be sent by fax or via the agent to the Traffic Center. The report must include the name, call sign, date and time, last port of call, ETA, destination, request for pilotage, draft, cargo, type of vessel, and any defects.

Vessels should then contact the Traffic Center on VHF channel 21 and report their name, call sign, draft, position, and ETA 1 hour prior to arrival.

Anchorage.—Designated anchorage areas, which may best be seen on the chart, lie centered about 0.5 mile E and 4 miles N of the fairway lighted buoy (52˚07.8'N., 4˚14.2'E.).

Caution.—Several submarine pipelines and cables extend seaward from the coast in the vicinity of the port and may best be seen on the chart.

A restricted area, within which anchoring and fishing are prohubited, extends up to 2 miles seaward from the vicinity of the port and may best be seen on the chart.

A tidal current, with a rate of up to 2.5 knots, may set NE across the entrance near the time of HW and large vessels are advised to enter at slack water.

7.14 Katwijk aan Zee (52˚12'N., 4˚24'E.), a small resort, is located 8 miles NE of Scheveningen. Two churches, one with a prominent tower, and two conspicuous high buildings stand in the vicinity of the town.

Noordwijk aan Zee (52˚15'N., 4˚26'E.), a resort, is located 3 miles NE of Katwijk aan Zee. It may be recognized by a conspicuous group of large hotels which stand along the shore. A main light is shown from a tower, 33m high, standing in the town.

A lighted survey platform, 41m high, stands offshore, 5.5 miles WNW of Noordwijk aan Zee.

Noordwijk aan Zee Light

Zandvoort (52˚23'N., 4˚32'E.) is located 8.5 miles NE of Noordwijk aan Zee. Several radio masts stand along the coast between these two resorts and are prominent from seaward. Several large buildings, a water tower, and two churches stand in the vicinity of Zandvoort and are all conspicuous.

Caution.—A submarine cable, which may best be seen on the chart, extends seaward from the vicinity of Zandvoort.

An ammunition dumping area, marked by a lighted buoy, lies centered 18 miles WNW of Scheveningen and may best be seen on the chart.

Numerous wrecks lie in the waters off this stretch of coast and have been swept to the depths indicated on the charts. Those wrecks, with depths of less than 11m, which lie in the

vicinity of the coastal routes or in the approaches to the ports, are usually marked by lighted buoys.

Numerous production platforms, wells, and submarine pipelines (gas and oil) lie in the waters off this stretch of coast and may best be seen on the charts. Extreme caution is advised when navigating in the vicinity of such facilities.

Rijn Oil and Gas Field (52˚18'N., 3˚48'E.), centered 19 miles NW of Scheveningen, is the principal exploration facility in this area. It consists of several platforms, one of which is equipped with a racon.

Approaches to IJmuiden and the Noordzeekanaal (Amsterdam)

7.15 IJmuiden, a small port, is located 34 miles NE of Hoek van Holland. It is also the gateway to the Noordzeekanaal which extends 13 miles ESE to the extensive port of Amsterdam.

IJ1 Lighted Buoy (52˚30'N., 4˚04'E.) is moored 17 miles W of the port entrance.

Ijmuiden Lighted Buoy (52˚29'N., 4˚24'E.), equipped with a racon, is moored 5 miles W of the port entrance.

IJ-Geul Approach Area (52˚30'N., 4˚00'E.), which may best be seen on the chart, is entered about 30 miles W of the port entrance. Its S side is marked by A-NE Lighted Buoy (52˚28'N., 3˚49'E.).

IJ-Geul (52˚29'N., 4˚24'E.), which may best be seen on the chart, is a channel leading from the E end of the IJ-Geul Approach Area to the port entrance. This channel extends in an ESE direction for about 12.5 miles.

Depths—Limitations.—Vessels may approach the port from the S by proceeding in a NE direction from the Maas North TSS. Vessels may approach the port from the N by proceeding in a SSE direction from the Off Texel TSS. Vessels from the W may approach directly from the Noord Hinder North TSS.

All vessels approaching the port with drafts of over 13.7m (salt water), up to maximum of 16.5m, are considered to be constrained by their draft and are referred to as being channel-bound. Such vessels must approach the port via an IMO-approved Deep Water Route, which leads through the IJ-Geul Approach Area and the IJ-Geul channel (see Pilotage below).

Vessels with drafts of 13.7m and less may also approach from the W via the IJ-Geul Approach Area and the IJ-Geul channel (see Pilotage below).

The IJ-Geul Approach Area has a least depth of 19.6m. The IJ-Geul channel is marked by lighted buoys on the S side. It is dredged to a depth of 18m over a width of 450m. The fairway leading through Buitenhaven, the outer harbor area lying between the breakwaters, has a dredged depth of 17.5m.

Pilotage.—Pilotage is compulsory for merchant vessels over 40m in length and all vessels carrying dangerous cargo.

All vessels should send their ETA at IJmuiden Lighted Buoy and request for pilotage at least 6 hours in advance. The message should be sent to Pilot-VTS Ijmuiden by telephone, fax, telegraph, telex, or VHF and must include the following:

Designator	Information
A	Name and call sign.
I	Destination port/berth.
J	ETA at IJmuiden Lighted Buoy.
O	Maximum draft.
U	Length and grt.

Vessels should then send a confirmation message 3 hours and 1 hour prior to arrival. All deviations of the ETA of more than 30 minutes should be reported.

Pilots embark by launch or may be transported by helicopter. Vessels requiring the pilot to be transported by helicopter should also include this request in their ETA message and state their direction of approach.

Pilots embark by launch within 3 to 7 miles W of the breakwaters, but the exact place depends on the size and draft of the vessel and also the weather conditions. Generally, pilots board, as follows:

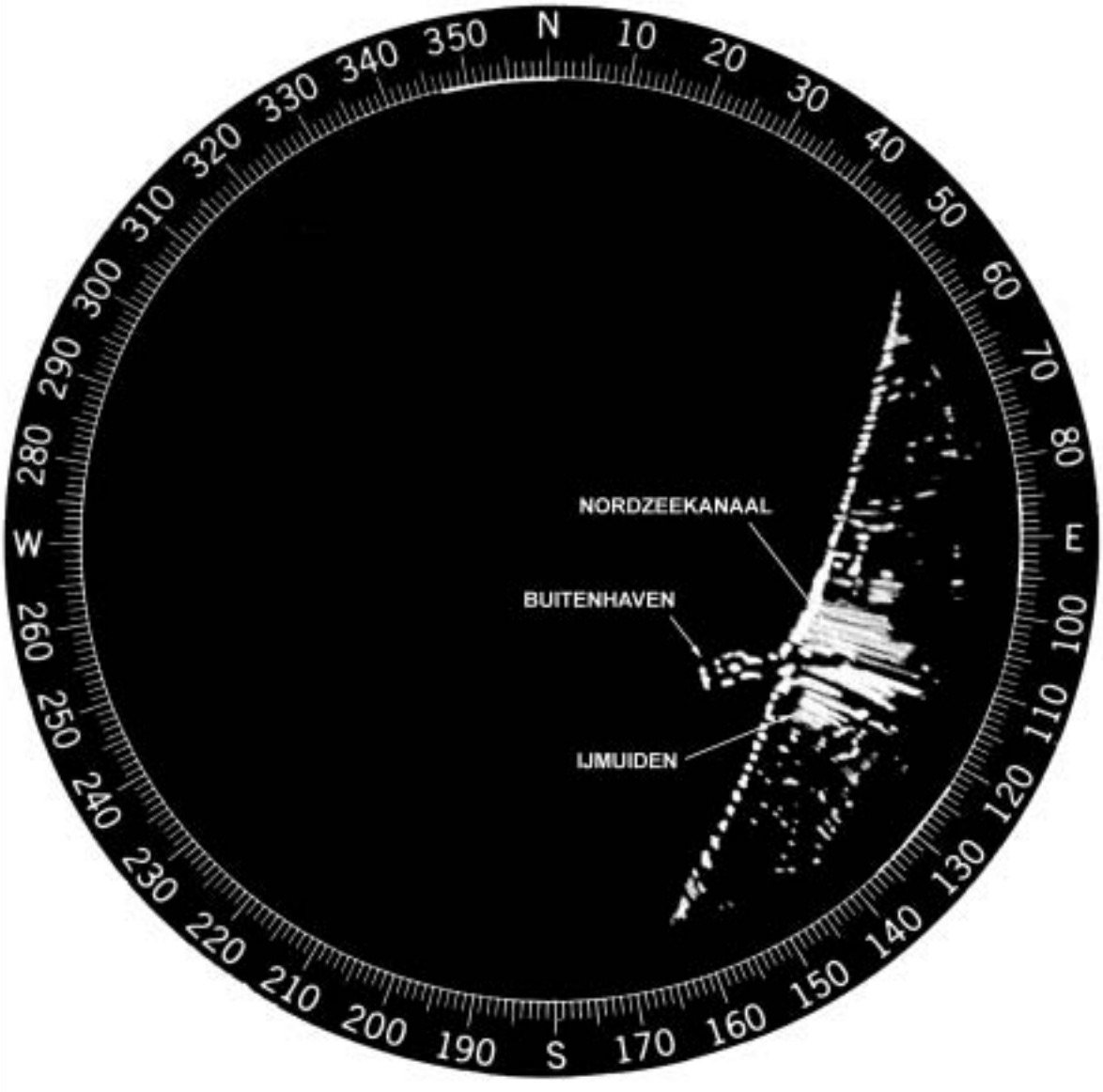
1. Vessels with drafts of less than 8m are boarded 3 miles WNW of the entrance.
2. Vessels with drafts of 8 to 10m are boarded 4 mile WNW of the entrance.
3. Vessels with drafts of over 10m are boarded 6 miles WNW of the entrance.

Pilots transported by helicopter will generally board or depart from vessels within a circular area, with a radius of 5 miles, centered on position 52˚28'N, 4˚15'E.

Vessels constrained by their draft (channel-bound), which are obliged to use the Deep Water Route, must send their ETA at the helicopter boarding area 24 hours in advance. They must then send a confirmation message 8 hours prior to arrival.

Such vessels, if not having a sea pilot onboard, must embark the pilot by helicopter in the W part of the IJ-Geul Approach Area near the rendezvous point (52˚30'N., 3˚50'E.). The exact place will be agreed upon by the helicopter and the vessel. It is reported that such vessels are generally boarded by two pilots. Before approaching this rendezvous point, vessels are advised, depending from which direction they came, to pass through a way point (52˚30'N., 3˚45'E.).

When the helicopter has arrived within VHF range, it will contact the vessel on VHF channel 7. This generally takes place when the helicopter is between 20 and 40 miles from the vessel. All communication between the helicopter and the vessel will be carried out on a designated VHF channel; however, if necessary, the helicopter may request the vessel to transfer to another channel. The call sign of the helicopter will be the word “Helicopter” followed by its registration letters as quoted by the Port Traffic Center. As soon as VHF contact has been established, the vessel should advise the helicopter of its position, course, and speed; the actual wind direction and wind speed across the deck; and any pitching or rolling conditions. The helicopter will then confirm acceptance of the conditions or will request the vessel to change course and/or speed.



PPI DISPLAY
APPROACH TO NORDZEEKANAAL
(AMSTERDAM)
POSITION: 52°30.0'N.
004°27.8'E.
RANGE SCALE: 8M

Regulations—Traffic Control.—A Vessel Traffic Service (VTS) system operates in the approaches to the port and within the Noordzeekanaal. Vessels should maintain a continuous VHF listening watch on the following assigned frequencies:

1. VHF channel 7 (Traffic Center IJmuiden)—W of IJmuiden Lighted Buoy.
2. VHF channel 61 (Port Control IJmuiden)—IJmuiden Lighted Buoy to the locks.
3. VHF channel 22 (IJmuiden Sluices)—Within the locks.
4. VHF channel 3 (Traffic Service Noordzeekanaal)—From the locks to Km 11.2.
5. VHF channel 68 (Amsterdam Port Control)—From Km 11.2 to Amsterdam.

For ETA message procedures, see Pilotage. Vessels carrying dangerous cargo must also include their nationality, the nature and quantity of dangerous cargo, manner of packing for any IMCO class 1 cargo, and the name of the agent in their initial ETA message.

Radar assistance can be provided, on request, to vessels within about 13 miles of IJmuiden Lighted Buoy.

The port (VTS System and Pilotage Center) can be contacted by E-mail, as follows:

hvp@amsterdamports.nl

Vessels approaching the port, with drafts of over 13.7m, are considered to be constrained by their draft (channel bound) and must show the appropriate lights and shapes. These vessels are obliged to use the Deep Water Route.

Due to the narrow fairway, vessels are prohibited from meeting or overtaking within the IJ-Geul channel.

For additional information, see Regulations under the Noordzeekanaal in paragraph 7.17.

Anchoring.—Vessels constrained by their draft (channel bound) may anchor in a designated area, which may best be seen on the chart, situated on the S side of the IJ-Geul Approach Area, about 28 miles W of the port entrance. This anchorage area may only be use with permission from the VTS Center at Ijmuiden.

An emergency anchorage area, which may best be seen on the chart, is situated on the N side of the IJ-Geul channel, about 5.5 miles W of the port entrance. This area is intended for the use of a vessel constrained by draft if entry to the port is obstructed for any reason.

A designated anchorage area, which may best be seen on the chart, is situated on the N side of the IJ-Geul channel, about 10 miles WNW of the port entrance.

Caution.—Anchoring is prohibited within an area, which may best be seen on the chart, extending 3 miles WNW from the breakwater heads. Anchoring is not recommended in an area, which may best be seen on the chart, extending about 2.7 miles WNW from the seaward end of the anchoring prohibited area.

An explosives dumping area, marked by a lighted buoy, lies centered about 18 miles WNW of the port entrance and may best be seen on the chart. A circular restricted area, with a radius of 3 miles, is centered on this explosives dumping area. Underwater operations are prohibited within this area.

Submarine pipelines, which may best be seen on the chart, extend seaward from points on the shore located about 0.3 mile S of the S breakwater and 1.2 miles N of the N breakwater.

During storms, with a strong flood current, a confused sea with heavy breakers may be observed near the port entrance.

IJmuiden (Ymuiden) (52˚28'N., 4˚35'E.)

World Port Index No. 31040

7.16 IJmuiden is located at the entrance to the Noordzeekanaal. In addition to its cargo facilities, the port is a supply base for the offshore oil and gas industry and a fishing center.

Tides—Currents.—Tides rise about 2m at springs and 1.6m at neaps; however, the direction of the wind has a strong influence on the height of tide.

At a position about 3 miles W of IJmuiden, the NE current begins about 2 hours before HW at IJmuiden and continues until about 3 hours after HW. It attains a maximum rate of 1.7 knots at about the time of HW. The SW current begins about 4 hours after HW at IJmuiden and continues until about 3 hours before HW. It attains a maximum rate of 1.3 knots at about 5 hours 30 minutes after HW.

Off the entrance to the port, the tidal currents commence about 50 minutes earlier than offshore. The NE current runs until about 3 hours after HW at IJmuiden. It attains a maximum rate of 1.8 knots at about the time of HW. The SW current runs until about 3 hours before HW. It attains a maximum rate of 1.2 knots at about 5 hours after HW. These rates may increase slightly during springs and decrease during neaps. However, during stormy weather, the current may attain a rate up to 5 or 6 knots in the vicinity of the breakwaters.

Winds—Weather.—Ice normally presents no problems at the port, except during very severe winters. At such times, an icebreaker is used to keep the harbor open.

Depths—Limitations.—The port consists of an outer harbor area, which is located W of the locks and tidal, and an inner harbor area, situated within the canal, close E of the locks.

IJ-Geul channel, with a dredged depth of 18m, leads between the breakwaters into Buitenhaven, the outer harbor area, which has a dredged depth of 17.5m in the fairway.

Forteiland, a small island, lies about 1.3 miles inside the breakwater heads and divides the fairway into two branches. Noorder Buitenkanaal, with a depth of 17.5m, leads N of this island and Zuider Buitenkanaal, with a depth of 9.4m, leads S of it.

Vissershaven and Haringhaven, with depths of 6 to 10m, are two quay-lined basins located on the SE side of the outer harbor which are accessed via Zuider Buitenkanaal. These basins have facilities for ro-ro ferry, offshore exploration support, and fishing vessels.

Hoogovenkanaal, located on the N side of the outer harbor, is accessed via Noord Buitenkanaal. It provides a bulk quay, 550m long, with depths of 14.2 to 18m alongside.

Hoogovenhaven, the main tidal basin, is located on the NE side of the outer harbor. It is accessed via Noord Buitenkanaal and Hoogovenkanaal. This basin provides 665m of quayage with depths of 9.4 to 11.3m alongside.

Vessels up to 150,000 dwt, 350m in length, and 16.5m draft can be accommodated in the outer harbor. However, vessels

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over 300m in length requiring to swing within Buitenhaven are restricted to a maximum draft of 12.1m.

Access to the inner harbor, which is located close within the Noordzeekanaal, is provided by three locks (see paragraph 7.17).

Several basins and quays, with depths of 3.5 to 9.9m, are situated on the N side of the canal within the inner harbor area. There are facilities for general cargo, bulk, and chemical vessels in addition to an offshore exploration supply base. Vessels up to 6,000 dwt, 11,000 dwt partly loaded, with drafts up to 6.4m can be accommodated.

Aspect.—The port is entered between two breakwaters. The entrance fairway is indicated by a lighted range shown from two prominent towers, 24m and 43m high, standing on the S side of the harbor. Additional lighted ranges indicate the various channels leading to the harbor basins and the locks.

A prominent signal station (harbor operations center) stands on the S side of the harbor close NNE of the front range tower.

The town of Ijmuiden is situated on the S bank of the entrance. The N bank is occupied by an industrial complex. Several conspicuous chimneys, the tallest being 166m high, stand in the vicinity of the steel works on the N side of the harbor and at the power station, 1.5 miles E. On the S side of the canal, a conspicuous water tower, with a red roof, stands 1.7 miles ESE of the port entrance.

Forteiland, a small island, is located W of the locks and divides the harbor fairway into two branches.

Pilotage.—See Approaches to IJmuiden and the Noordzeekanaal (paragraph 7.15).

Regulations.—See Approaches to IJmuiden and the Noordzeekanaal (paragraph 7.15.).

The Noordzeekanaal

7.17 The **Noordzeekanaal** (52˚28'N., 4˚38'E.), which is 13 miles long, connects Amsterdam with the North Sea. Its water level is maintained by the locks which are situated at IJmuiden and close E of Amsterdam. The passage generally takes about 2 hours.

Several branch canals, called “Zijkanalen” and designated by letters, may be entered from the main canal. Most of these lead to smaller canal systems which connect with the inland waterway system.

Velsen Terminal (52˚28'N., 4˚40'E.) is located at the entrance to Zijkanaal A, 2 miles E of the locks. It provides 620m of quayage, with depths of 8.5 to 11.5m alongside.

Beverwijk Terminal (52˚28'N., 4˚40'E.) is located within Zijkanaal A, about 0.5 mile N of Velsen Terminal. It provides 720m of quayage, with a depth of 7m alongside, and can accommodate vessels up to 135m in length and 6.4m draft.

Buskruithaven (52˚27'N., 4˚41'E.), an explosives terminal, is situated on the S bank of the canal, about 3.5 miles above the locks. This terminal, which is used by ocean-going vessels, consists of several small jetties and a number of dolphins. It has a depth of 9.5m alongside.

Zaandam (52˚26'N., 4˚50'E.) (World Port Index No. 31050), a small harbor, is situated on the N side of the canal, 4.2 miles W of Amsterdam, and consists of three main basins.

Isaac Baarthaven provides 370m of berthage, with depths of 5 to 9m alongside; Dirk Metselaarhaven provides 180m of berthage, with a depth of 10m alongside; and Wim Thomassenhaven provides 200m of berthage, with a depth of 10.5m alongside. There are facilities for tanker, general cargo, and bulk vessels. Vessels up to 15,000 dwt, 200m in length, and 10m draft can be accommodated.

Tides—Currents.—Tides at Ijmuiden rise about 2m at springs and 1.6m at neaps.

Depths—Limitations.—Three locks located at IJmuiden provide access to the canal. Middensluis and Zuidersluis are accessed via Zuider Buitenkanaal and Noordersluis, the northernmost, is accessed via Noorder Buitenkanaal (see paragraph 7.16).

Zuidersluis is 119m long and 18m wide. It has a depth of 8m on the sill and can be used by vessels up to 95m in length, 17m beam, and 5.8m draft.

Middensluis is 225m long and 25m wide. It has a depth of 10m on the sill and can be used by vessels up to 185m in length, 24m beam, and 8m draft.

Noordersluis, the largest lock, is 400m long, 50m wide, and has a depth of 15m on the sill. The entrance fairway leading from the E end of Noorder Buitenkanaal to this lock is dredged to a depth of 14.4m.

The canal has a depth of 15m. Vessels up to 325m in length, 42m beam, and 13.1m draft may pass through Noordersluis and proceed to Amsterdam without special permission.

Vessels up to 45m beam and 14m draft may be allowed to transit the canal with special permission. Vessels over 42m beam and 13.1m draft must apply in writing for special permission 7 days in advance.

Pilotage.—See Approaches to IJmuiden and the Noordzeekanaal (paragraph 7.15).

Regulations.—Within the canal, vessels with drafts of less then 4.5m are limited to a maximum speed of 9 knots, vessels with drafts of 4.5 to 8m are limited to a maximum speed of 7 knots, vessels with drafts of over 8m are limited to a maximum speed of 6.5 knots, and vessels in tow are limited to a maximum speed of 5 knots.

Vessels with drafts of 8m or more are considered to be constrained by draft and must display the appropriate signals.

Caution.—Ferries cross the canal at several places.

Numerous submarine pipelines and cables lie across the canal in places and may best be seen on the chart.

Several tunnels cross under the canal and may be seen on the chart; it was reported that the magnetic compass may be deflected when in the vicinity of these tunnels.

During sluicing operations, a noticeable current in the canal may be experienced.

Amsterdam (52˚22'N., 4˚54'E.)

World Port Index No. 31060

7.18 The main port of Amsterdam, located at the E end of the Noordzeekanaal, is formed by a complex of large basins and quays, which lie S and E of Zaandam. In addition, numerous smaller basins and several shipyards are located along the N side of the canal.

The port is connected to the extensive inland waterway system. The Noordhollandsch Kanaal leads N for 43 miles to Den Helder; the Schinkel Gouw Kanaal leads to Rotterdam.

Return to paragraph: 7.15

The Amsterdam Rijnkanaal leads S and, by way of the Merwedekanaal, provides access to the S part of the country and the industrial area of the Rhine River. Oranjesluizen, a lock located at the E end of the port, provides access to IJsselmeer, an inland and mostly man-made sea.

Depths—Limitations.—The port can handle large numbers of ocean-going vessels, either alongside the quays or at mooring buoys within the basins. In addition, numerous other berths are available for barges and inland vessels. Vessel are generally limited to a length of 325m, a beam of 42m, and a draft of 13.1m by the dimensions of the canal and the entrance locks (see paragraph 7.16). It is reported that vessels up to 100,000 dwt and 170,000 dwt, partly loaded, have been accommodated.

There are facilities for bulk, chemical, general cargo, container, ro-ro, tanker, LPG, automobile ferry, and passenger ferry vessels. There are also several repair yards, dry docks, and floating docks. The largest, which is 250m long and 36m wide, can handle vessels up to 85,000 dwt.

The canal has a dredged depth of 15m as far as Mercuriushaven (52˚24.3'N., 4˚52.6'E.), at the W end of the Het IJ channel. The Het IJ channel has a dredged depth of 11m for most of its length through the port, decreasing to 7m at the E end.

The principal berthing facilities and basins within the port, described from W to E, are, as follows:

1. Afrikahaven, entered from the canal, has 1,900m of berthage, with a depth of 15m alongside (under construction 2001).
2. Amerikahaven, entered from the canal, has 2,890m of berthage, with a depth of 15m alongside.
3. Australiehaven has 1,300m of berthage, with a depth of 15m alongside.
4. Aziehaven has 980m of berthage, with a depth of 12m alongside.
5. ADM Dokhaven, entered from the canal, has 310m of berthage, with depths of 7 to 9m alongside.
6. Westhaven, entered from the canal, has 2,650m of berthage, with depths of 14 to 15m alongside.
7. Sonthaven has 830m of berthage, with a depth of 10 to 13m alongside.
8. Suezhaven has 750m of berthage, with a depth of 10m alongside.
9. Hornhaven has 640m of total berthage, with a depth of 12.5m alongside.
10. Beringhaven has 330m of total berthage, with a depth of 9m alongside.
11. Jan van Ribeeckhaven, entered from the canal, has 850m of berthage, with a depth of 12.5m alongside.
12. Adenhaven has 200m of berthage, with depths of 5 to 10m alongside.
13. Usselincxhaven, entered from the canal, has 950m of berthage, with depths of 12.5 to 14.5m alongside.
14. Petroleumhaven, entered from the canal, has 850m of berthage, with depths of 9 to 10m alongside.
15. Coenhaven, entered from the canal, has 3,800m of berthage, with a depth of 10m alongside. This includes Amerika, Africa, Azie, and Europa Quays, which are situated at its SW side.
16. Mercuriushaven, entered from the canal, has 1,250m of berthage, with depths of 10 to 15m alongside.
17. Vlothaven has 1,170m of total berthage, with a depth of 15m alongside.
18. Neptunushaven has 255m of berthage, with a depth of 10.5m alongside.
19. Nieuwe Houthaven has 90m of berthage, with a depth of 6.5m alongside.
20. Minervahaven has 350m of berthage, with a depth of 6.5 to 7m alongside.
21. Amfert is situated on the S side of the canal, close E of the entrance to Coenhaven. It has 310m of berthage, with a depth of 10.2m alongside.
22. De Ruyterkade has 220m of berthage, with a depth of 6m alongside.
23. Java Quay, on the N side of IJ Haven, has 1,150m of berthage, with a depth of 7.7m alongside.
24. Oostelijke Handelskade, on the S side of IJ Haven, has 1,995m of berthage, with depths of 5 to 9.8m alongside.

Numerous small basins and branch canals can be entered on the N side of the Het IJ channel, at the E end of the port. This part of the harbor is lined with industrial plants and shipyards. The Noordhollansch Kanaal is entered through locks situated at about the center of this area.

IJmuiden to Den Helder

7.19 Between IJmuiden and Zeegat van Texel, 30 miles NNE, almost the entire coast is lined with sand dunes. The Hondbossche Zeewering is a massive sea wall, which fronts the shore between Kamperduin, 16 miles NNE of IJmuiden, and Petten, 3 miles farther NNE.

Two prominent churches stand at Wijk aan Zee, 2 miles N of IJmuiden, and a hotel, situated on a dune close N of them, is conspicuous.

Egmond aan Zee Light

Egmond aan Zee (52˚37'N., 4˚37'E.), a small resort town, is situated 8 miles NNE of Wijk aan Zee. A main light is shown from a prominent tower, 28m high, standing near the shore. The prominent steeple of a church can be seen behind the light.

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A prominent water tower is situated 1.3 miles inland at Castricum aan Zee, 3.7 miles S of Egmond aan Zee. Several conspicuous resort villas stand on the dunes at Bergen aan Zee, 2.5 miles N of Egmond Light.

Petten (52˚46'N., 4˚40'E.), a small village, is situated 9 miles N of Egmond aan Zee. A church, with a prominent spire, stands at a wide gap in the dunes and several houses and windmills are situated close S of it. Two prominent wind generators are reported to stand about 3 miles S of the village.

A conspicuous nuclear power station and two chimneys, 45m high, stand 1.5 miles N of Petten.

Pettemerpolder (52˚47'N., 4˚37'E.), a shoal bank, extends up to about 3 miles NW of Petten and has a least depth of 4.3m.

Caution.—In thick or hazy weather, vessels should proceed with caution when approaching this part of the coast, as the depths are fairly uniform throughout the area.

Submarine cables, which may best be seen on the chart, extend seaward from the vicinity of Egmond aan Zee and Castricum aan Zee.

An outfall submarine pipeline extends 2.3 miles W across Pettemerpolder from the power station located N of Petten. It is marked near the seaward end by a lighted buoy.

7.20 Off-lying dangers.—Brown Ridge (52˚38'N., 3˚19'E.), a bank, lies 46 miles WNW of IJmuiden and extends in a N to S direction for about 12 miles. It has depths of 15 to 17m, but they frequently vary due to shifting sand.

Numerous production platforms, wells, and gas and oil pipelines lie in the waters off this stretch of coast and may best be seen on the charts. Extreme caution is advised when navigating in the vicinity of such facilities.

The principal oil/gas fields in the area are Helder Field and Helm Field, which are situated within the separation zone of the Off Texel TSS (see paragraph 8.2), about 22 miles WNW of Petten.

Numerous wrecks lie in the waters off this stretch of coast and have been swept to the depths indicated on the charts. Those wrecks, with depths of less than 11m, which lie in the vicinity of the TSS and the coastal routes, are usually marked by lighted buoys.

A wreck, with a swept depth of 10.8m, lies about 11 miles W of Petten and is marked by three lighted buoys, one of which is equipped with a racon.

Zeegat van Texel

7.21 Zeegat van Texel (52˚58'N., 4˚44'E.) is the passage which leads between Kaap Hoofd, the NW extremity of the Netherlands mainland, and the island of Texel, to the N. It provides access to the port of Den Helder and also to the Waddenzee, the tidal part of the former Zuider Zee. The IJsselmeer, the non-tidal part of the former Zuider Zee, may be reached through locks which are situated on the S side of the Waddenzee.

Haaksgronden (52˚58'N., 4˚40'E.), a group of shoals, lie in the entrance to Zeegat van Texel and extend over 5 miles from the shore. Three channels run through these groups; Schulpengat leads along the shore of Noord Holland, Molengat leads along the SW coast of Texel, and Westgat leads across the center of the banks.

Zuider Haaks is that portion of Haaksgronden which lies between Schulpengat and Westgat. The depths on this portion of the banks are very irregular. Noordrug, the W side of Zuider Haaks, has a least depth of 3.7m and is steep-to on its seaward side. Bollen van Kijkduin, the E side of Zuider Haaks, is steep-to on both its E and N sides. This part of the bank and Boterug, a spur jutting to the SW, have patches with depths of 1.7 to 5m.

Noorder Haaks is that portion of Haaksgronden which lies between Westgat and Molengat. Drying patches lie on its E and central parts, and the remainder is very shallow, with depths of less than 2m. Razende, the E part of Noorder Haaks, is steep-to on its S side. Keizerbult, a spur projecting SW from Noorder Haaks, forms the N side of Westgat and has a least depth of 1m.

Fransche Bankje lies between Schulpengat and the coast of Noord Holland, and has a least depth of 3m.

Zanddijk Grote Kaap Light (52˚53'N., 4˚43'E.) is shown from a prominent tower, 17m high, standing 5 miles S of Kaap Hoofd, the NW extremity of the Netherlands mainland. A disused framework light structure stands close WNW of this light.

Kijkduin Light (52˚57.3'N., 4˚43.7'E.), a main light, is shown from a prominent tower, 55m high, standing about 0.5 mile SSW of Kaap Hoofd.

Kijkduin Light

Huisduinen Light (52˚53'N., 4˚43'E.) is shown from a prominent tower, 18m high, standing about 0.3 mile SSW of Kijkduin Light and a church, with a conspicuous tower, is situated close NE of it.

Schilbolsnol Light (53˚00.5'N., 4˚45.8'E.) is shown from a prominent structure, 21m high, standing 3 miles NNE of Kaap Hoofd.

Caution.—Several dangerous wrecks lie in the vicinity of the above banks and may best be seen on the chart.

Return to paragraph: 7.24

Three submarine pipelines, which may best be seen on the chart, extend seaward from the vicinity of Zanddijk Grote Kaap Light.

7.22 **Schulpengat** (52˚55'N., 4˚40'E.) is the deepest channel leading through Haaksgronden. It is also the most favorable, as the current runs almost directly in line with the channel and the landmarks on the shore are nearly always visible. The channel is 0.7 mile wide at the entrance, but narrows to about 0.3 mile farther in. The fairway has a least depth of 9.3m (2002). It is marked by lighted buoys and indicated by a lighted range, which may best be seen on the chart.

Breewijd, the NE extension of Schulpengat, leads in deep water close around Kaap Hoofd and into Marsdiep.

SG Lighted Buoy (52˚53'N., 4˚38'E.), equipped with a racon, is moored 3 miles W of Zanddijk Grote Kaap Light and marks the seaward entrance to Schulpengat.

Molengat (53˚00'N., 4˚42'E.) leads between Noorder Haaks and the SW side of Texel. In clear weather, this channel is easy to approach because of its wide seaward entrance and gently sloping bottom. The fairway has a least depth of 5.9m (2002) and is marked by lighted buoys.

MG Lighted Buoy (53˚04'N., 4˚39'E.) is moored 6.7 miles NNW of Kaap Hoofd; the seaward entrance to Molengat lies about 1.5 miles SE of it.

Westgat (52˚57'N., 4˚38'E.) leads over the shallow ridge, which connects the outer parts of Zuider Haaks and Noorder Haaks, and then joins Schulpengat at the SW end of Breewijd. It should only be used during favorable weather conditions as strong breezes raise a rough sea within it. This channel has a depth of 2.7m over the ridge. The fairway is not marked and it should only be used by small vessels with local knowledge.

Marsdiep (52˚58'N., 4˚45'E.), a deep channel, leads in an E direction between Texel and the coast to the S, from the junction of Breewijd and Molengat into the Waddenzee. The fairway is marked by buoys and, at its E end, divides into two main channels; Texelstroom continues to the NE and Malzwin continues to the ENE.

Caution.—It was reported (1990) that the lighted range indicating the Schulpengat fairway is often difficult to see. In addition, due to the shifting banks, the range may be slightly inaccurate in relation to the positions of the fairway buoys, which are continually revised. Vessels entering the channel are advised to pass SE of SG Lighted Buoy.

Den Helder (52˚58'N., 4˚47'E.)

World Port Index No. 31020

7.23 Den Helder, the principal base of the Royal Netherlands Navy, is located on the NW end of the Netherlands mainland, 2 miles E of the entrance to Zeegat van Texel. The harbor lies in an inlet on the S side of Marsdiep. The port is also a fishing center and a supply base for vessels and structures servicing the offshore oil and gas industry.

Tides—Currents.—Tides rise about 1.8m at springs and 1.6m at neaps.

The incoming tidal current generally starts to set off Den Helder about 5 hours before HW water and continues until HW. The outgoing tidal current starts to set about 1 hour 30 minutes after HW and continues until about 6 hours 30 minutes after HW. The incoming current attains its maximum rate of 3.5 knots at about 3 hours before HW. The outgoing current attains its maximum rate of about 3.4 knots about 5 hours after HW. Winds from the W can prolong the incoming tidal current and increase the water level. Winds from the E can prolong the outgoing tidal current and decrease the water level.

Winds—Weather.—During very severe winters, the port may be closed periodically. Continued E winds may cause drift ice to accumulate in the harbor. Normally, the harbor tugs are able to keep the port open.

Depths—Limitations.—The entrance channel, which is 240m wide, leads directly from Marsdiep into Marinehaven Willemsoord, the main harbor basin. It has a dredged depth of 7.8m (2002).

The facilities and berths within the main harbor basin are for the use of naval vessels only and have dredged depths of 6.3 to 8.3m alongside. It is reported (2002) that naval vessels up to 200m in length can be accommodated.

Commercial facilities include Riijkszeehaven Het Nieuwe Diep, a basin, which is entered at the W side of Marinehaven Willemsoord. This basin extends 0.8 mile SSE and has depths of 6 to 7m alongside. Moormanbrug, a double bascule bridge, spans the middle of this basin and has a navigable passage, 18m wide. Commercial vessels up to 150m in length and 7.5m draft have been handled at HW.

In addition, an inner commercial harbor, which is used by small vessels and yachts, is situated at the W side of the port. of Riijkszeehaven Het Nieuwe Diep. This inner harbor is entered through Koopvaardersschut Lock, which is situated at the S end of Riijkszeehaven Het Nieuwe Diep. Vessels up to 85m in length, 14m beam, and 4.5m draft can be handled. The inner harbor also provides access to the Noordhollandsch Kanaal, Alkmaar, and Amsterdam.

Wierhoofd, a small basin, lies close W of the entrance to the main basin and is entered directly from Marsdiep. It has a depth of 5.5m and is used by local ferries.

Aspect.—A prominent radar mast stands 0.2 mile E of Kaap Hoofd. Within the dike, which fronts the N part of Den Helder, the buildings of the observatory, with a small tower; the town hall; the church; and a water tower are all visible from seaward. The buildings situated in the vicinity of the dockyard are also prominent. A conspicuous tower stands on the E side of the harbor entrance. The fairway leading into the main harbor basin is indicated by a lighted range which may best be seen on the chart.

Pilotage.—Pilotage for the Schulpengat is generally not compulsory, but compulsory pilotage within this approach channel may be imposed on vessels by the authorities.

Pilotage is compulsory for the following vessels:

1. For the fairway between Texel Roads to Den Helder, as follows:
   a. In Nieuw Diep—Vessels over 90m in length and 7m draft.
   b. In Koopvaardersbinnenhaven—Vessels over 90m in length and 5m draft.
2. For the fairway between Den Helder and Kornwerderzand—Vessels over 60m in length or 4m draft.

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3. For the fairway between Den Helder and Den Oever and other harbors in the Waddenzee—Vessels over 60m in length or 2.5m draft.

Pilots may be contacted by VHF and board, as follows:

1. For vessels entering the port, about 0.5 mile E of S14-MG17 Lighted Buoy (52˚58.3'N., 4˚43.4'E.).
2. For all vessels requiring pilotage through Schulpengat, in position 52˚38'N, 4˚30'E (off Egmond aan Zee).

Vessels should send an ETA at the appropriate pilot boarding position at least 6 hours in advance. The message should be sent through the Traffic Center Den Helder and include the word "Texelrede" if pilotage is required inward from Rede Den Helder. The message should also include the vessel's name, call sign, flag, date and time, destination, pilot boarding position, draft, description of cargo, length, beam, and grt.

Because the pilot boarding position off Egmond aan Zee is situated within the area of the Noordzeekanaal Vessel Traffic Service (VTS) system, vessels must also report to VTS IJmuiden on VHF channel 7 (see paragraph 7.15).

Regulations.—Traffic Control—A Vessel Traffic Service (VTS) system operates in the approach area and is managed by the Traffic Center Den Helder. The seaward boundary of the area is formed by a line joining the following points:

1. Zanddijk Grote Kapp Light.
2. SG Lighted Buoy.
3. ZH Lighted Buoy (52˚55'N., 4˚35'E.).
4. MR Lighted Buoy (52˚57'N., 4˚34'E.).
5. NH Lighted Buoy (53˚00'N., 4˚35'E.).
6. MG Lighted Buoy.
7. Texel (53˚04'N., 4˚44'E.).

All vessels within the VTS area should maintain a listening watch on VHF channel 12. All ocean-going vessels should report to the Traffic Center when entering the VTS area and when berthing. All ocean-going vessels, with the exception of local fishing vessels, must obtain permission to enter the harbor.

Anchorage.—Vessels may only anchor within Marsdiep and Texelstroom at the designated berths, which may best be seen on the chart. These berths are protected from all except W winds, which raise a heavy swell.

Directions.—A radar reference line, which may best be seen on the chart, indicates the route leading into the main basin and is used by naval vessels. Guidance by radar is occasionally given, but only to naval vessels.

Caution.—A prohibited anchorage area is situated in the vicinity of the breakwater and may best be seen on the chart.

Several submarine cables and pipelines lie within the port and may best be seen on the chart.

When approaching Den Helder, a good lookout should be kept for submarines which exercise in these waters. In addition, firing and torpedo exercise areas are situated within Marsdiep and Texelstroom.

Oil drilling rigs and platforms may be encountered in the approach fairways leading to the port.

Texel and Vlieland

7.24 **Texel** (53˚05'N., 4˚48'E.), a low and sandy island, is 13 miles long and about 5 miles wide in its central part. Except for the S end, the entire W coast of Texel is lined by sand dunes. To the E of the dunes, the island is mostly flat.

Loodsmansduin, a high dune, stands about 2 miles N of the S end of the island and is a conspicuous landmark. A beacon mast, 10m high, stands about midway along the W side of the island. Other prominent landmarks include Schildbolsnol Light (see paragraph 7.21) and the churches standing at De Hoorn, 1.2 miles NNW of the light, and at Den Koog, 4.5 miles N of Den Hoorn.

A main light is shown from a conspicuous tower, 52m high, standing at Eierland, the N extremity of Texel.

Texel Light (Eierland)

Vlieland (53˚16'N., 4˚58'E.), 10.5 miles long and 1.5 miles wide in places, is separated from Texel by Engelschmangat. The SW half of this island is low and sandy, whereas the NE half is marked by dunes. Vuurduin, the highest dune on the island, rises near the NE end. A main light is shown from a prominent metal tower, 17m high, standing on Vuurduin.

Vlieland Light

Zeegat van Terschelling

7.25 Zeegat van Terschelling (53˚19'N., 5˚08'E.) is the channel lying between the NE end of Vlieland and the SW end of Terschelling. It provides access to the Waddenzee, IJsselmeer, and the port of Harlingen.

The shoals in the approach to the channel extend up to 3 miles seaward of the islands and include several detached patches. All of these shoals are steep-to on their W and NW sides, with very irregular depths elsewhere. The shallowest depths and some drying heights are generally found on the central and NW parts of these shoals. The names of these shoals are Gronden van Stortemelk, Wester Gronden, Noordwest Gronden, and Noorder Gronden.

Zuider Stortemelk, the main entrance channel for commercial traffic, leads close N of the N end of Vlieland. This channel has considerable depths in places but the bar, which lies at its E end, is subject to frequent change. It was reported (1998) that the least depth in mid-channel over the inner bar was 6m.

The channel is marked by buoys. ZS Lighted Buoy (53˚19'N., 4˚56'E.), equipped with a racon, is moored about 5 miles W of Vuurduin Light and marks the outer entrance.

Vliestroom, a broad channel, is marked by buoys and leads from the inner end of Zuider Stortemelk into the Waddenzee. It extends SE for 3 miles and passes between Vlieland and Terschelling. Then it trends S for 3 more miles, where it divides into two smaller channels.

Aspect.—Terschelling Light (53˚22'N., 5˚13'E.) is shown from Brandaris Tower, which stands in the vicinity of the small craft harbor at West Terschelling. The tower is 52m high and prominent.

Terschelling Light (Brandaris Tower)

Pilotage.—See Harlingen (paragraph 7.27).

Regulations.—A Vessel Traffic Service (VTS) system operates in the area of Zeegat van Terschelling and is mandatory for all vessels.

The VTS area consists of the fairways of Zuider Stortemelk, Noordgat, Schuitengat, West Meep, Vlieree, Vliestroom, and Vliesloot. Its NW limit is bounded by a line joining ZS Lighted Buoy (53˚19'N., 4˚56'E.), the TG Lighted Buoy (53˚24'N., 5˚02'.), and Stolzenfels Lighted Buoy (53˚26'N., 5˚10'E.). The system is controlled by the Brandaris Traffic Center, which is located at Brandaris Tower (53˚22'N., 5˚13'E.), on the SE side of West Terschelling.

Vessels must report to Brandaris VTS Center on VHF channel 2 when entering or leaving the VTS area, on entering or leaving a harbor directly adjoining the VTS area, and on anchoring or weighing anchor. The report should include vessel's name, call sign, type, length, beam, draft, position, port of destination, port of departure, any dangerous cargo, and any special details.

All vessels in the area must keep a continuous listening watch on VHF channel 2. The VTS Traffic Center provides weather information at 30 minutes past every odd hour.

The Waddenzee

7.26 The **Waddenzee** (Wadden Sea) (53˚13'N., 5˚13'E.) is bounded on the W side by the islands of Texel, Vlieland, and Terschelling. It is bounded on the E and S sides by Friesland, the Afsluitdijk, and the coast of Noord Holland. The S part of the Waddenzee may be entered through Zeegat van Texel and the N part through Zeegat van Terschelling; the latter providing the main approach to Harlingen. Texelstroom and Vliestroom, the principal channels, are entered from Zeegat van Texel and Zeegat van Terschelling, respectively. Numerous smaller channels branch off from the main ones and lead to various small places in the Waddenzee.

The Afsluitdijk, which is also known as the Great Enclosure Dam, connects Wieringen (52˚55'N., 5˚00'E.), a former island, to Friesland, 15 miles NE. It separates the S part of Waddenzee from IJsselmeer.

Texelstroom, the widest and deepest channel, leads NE from Marsdiep along the coast. About 8 miles NE of Den Helder, it trends away from the coast of Texel and leads in ESE for 4 miles. This channel is deep throughout and marked by lighted and unlighted buoys and beacons.

Scheurrak, along with its continuations of Omdraai and Oude Vlie, forms a narrow winding channel, 10 miles long. It branches off from Texelstroom at the W end and leads NE to Inschot, in the N part of the Waddenzee. The fairway has a least depth of 3.6m (1999) in mid-channel.

Malzwin, with its extension Wierbalg, leads from Texelstroom to Den Oever. The channel has a least depth of 1.2m and is marked by buoys.

Vliesloot, a small channel, branches off Zuider Stortemelk and leads around the E end of Vlieland to Oost Vlieland. There is a depth of 2.9m in this channel, but it is subject to frequent change because of constant silting. In addition, a swift current runs through this channel.

Schuitengat, a channel marked by buoys, branches off Boomkensdiep and leads around the SW end of Terschelling. It has a least depth (1993) in mid-channel of 3.2m. West Meep branches off Vliestroom, about 3 miles within the entrance. It flows E and NE and then finally divides into small channels which lead to the W shores of Friesland. Slenk is a narrow winding channel which leads from the N side of West Meep into Schuitengat and then to West Terschelling.

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Blauwe Slenk leads E and SE from the S end of Vliestroom to Harlingen. The SE end of this channel, which is named Vaargeul langs de Pollendam, leads S of Pollendam, a training wall about 2 miles long.

Inschot leads S from the S end of Vliestroom for 5 miles where it is joined by Oude Vlie, which leads to the S part of the Waddenzee. Zuidoostrak leads SE from the S end of Inschot and, at its S end, joins Doove Balg. An extension of this channel leads to Kornwerderzand.

Mok, a shallow inlet, is located on the E coast of Texel near its S end, but is closed to general shipping.

Den Oever (52˚56'N., 5˚02'E.), located at the SW end of the Afsluitdijk, has a lock through which small vessels may obtain access to IJsselmee. The lock, which is 129m long and 14m wide, has a depth of 3.1m over the sill. It can handle vessels up to 100m in length, 12m beam, and 2.8m draft.

Kornwerderzand (53˚04'N., 5˚20'E.), located at the NE end of the Afsluitdijk, has two sets of locks through which vessels may pass from the Waddenzee to the IJsselmeer. The largest lock is 127.6m long, 14m wide, and has a depth of 3.1m over the sill. It can handle vessels up to 100m in length, 12m beam, and 2.8m draft.

Harlingen (53˚11'N., 5˚25'E.)

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7.27 Harlingen, a commercial port, is located on the E side of the Waddenzee, 21 miles above the entrance to the Zeegat van Terschelling. A secondary route leads to the port through the Zeegat van Texel. It is 53 miles long and passes through narrow, winding, and shallow fairways.

Tides—Currents.—Tides rise about 2.1m at springs and 1.9m at neaps.

With a rising tide, the tidal current sets NE across the harbor entrance and may attain a rate up to 2 knots. With a falling tide, the tidal current sets SW across the harbor entrance and may attain a rate up to 1 knot.

Winds—Weather.—Ice may appear in the approaches to the port from mid-December to the early part of March, the normal period being during January and February. Icebreakers are normally used for about 10 days per year, but during severe winters, the port may be closed for several weeks.

Depths—Limitations.—Vaargeul langs Pollendam, a narrow dredged approach channel, leads to the port from the vicinity of the Zeegat van Terschelling. The fairway has a least depth of 3.7m (1999).

The main harbor, entered through two converging breakwaters, is divided into five tidal basins. These basins provide about 1,800m of quayage with depths of 3.2 to 7m alongside. There are facilities for general cargo, tanker, container, and ro-ro vessels. Generally, vessels up to 7,300 dwt, 130m in length, and 6.5m draft can be accommodated at HWS.

There are also facilities for offshore oil and gas support vessels, fishing boats, and yachts.

Two locks within the port provide access to a canal which leads to Groningen (55˚28'N., 8˚23'E.). The largest lock is 127m long, 12m wide, and has a depth of 3.1m over the outer sill. Vessels up to 79m in length, 9.5m beam, and 2.6m draft can enter this lock.

Pilotage.—Pilotage is compulsory between Zeegat van Terschelling and Harlingen for vessels over 70m in length or 6m draft. Pilotage is compulsory between Harlingen and Kornwerderzand (and other ports within the Waddenzee) for vessels over 60m in length or 2.5m draft.

Vessels should send an ETA and request for pilotage at least 6 hours in advance of their arrival at the pilot boarding position, with a confirmation 2 hours prior to arrival.

Pilots board vessels carrying hazardous cargo in the vicinity of SM Lighted Buoy (53˚19'N., 4˚56'E.) and all other vessels in the vicinity of ZS14 Lighted Buoy (5˚19'N., 5˚07'E.).

Vessels should report to the port (Havendienst Harlingen) on VHF channel 11 about 30 minutes prior to arrival at the harbor.

Anchorage.—Vessels with drafts up to 4.3m can anchor off the harbor entrance if the height of tide permits.

Caution.—The positions of the buoys and lighted ranges, which mark the channels, should not be relied on as they are constantly altered to conform to depth changes in the fairways.

Allowance should be made for possible differences in sea level due to the prevailing wind as well as the tide.

Local ferries may be encountered within the inner channels.

IJsselmeer

7.28 **IJsselmeer** (52˚52'N., 5˚12'E.) lies S of the Waddenzee and is separated from it by the Afsluitdijk, a large dam. Vessels are able to enter the IJsselmeer via the locks at Den Oever and Kornwerderzand and also through the Oranjesluizen, at Amsterdam.

Extensive areas of the IJsselmeer have been reclaimed and further reclamation is projected, including practically the entire S part. There are depths of over 4m in the center of the IJsselmeer, but the depths decrease towards the shores. The harbors and channels within IJsselmeer are shallow.

Medemblik, Enkhuizen, and Hoorn are small harbors located on the W side of the IJsselmeer. Hindeloopen, Stavoren, Lemmer, Urk, and Harderwijk are small harbors located on the E side.